Remarks

Applicants request entry of the foregoing amendments, consideration of the following remarks and reconsideration of the rejections set forth in the office action mailed September 11, 2008 setting a shortened statutory period for response to expire on December 11, 2009. Claims1 and 8 have been amended and claim 6 has been cancelled. A petition for a three month extension of time to March 11, 2009 is filed herewith.

Claims 1-12 were rejected under 35 USC 102(b) as being anticipated by Shinozaki et al (US 6,547,990). Applicants submit that Shinozaki '990 fails to anticipate the present invention as currently claimed.

The present invention is directed toward the discovery of a method of preparing electrodes based on activated carbon and carbon nanotubes in a weight proportion of activated carbon to carbon nanotubes from 95/5 to 50/50 which provides for electrodes which exhibit a capacitance that is little changed from pure materials and is better maintained as a function of current density while providing a resistance that is significantly decreased even after aging. The electrodes are intended particularly for electrochemical double layer storage cells (supercapacitors).

The process of the present invention comprises forming an electrode from activated carbon and carbon nanotubes on a collector by first blending activated carbon and carbon nanotubes in a ratio of from 95/5 to 50/50 to form an initial powdery carbon blend. The initial powdery carbon blend is than blended with a first solvent such as ethanol. A polymer binder in a second solvent is added and the mixture blended until homogenized to form a paste. The paste can than be dried to remove the first solvent, and than is than dried on a collector to form an electrode film. The paste can optionally be blended prior to drying on the collector. The "first" drying step to remove the first solvent is optional. New claim 13 has been added to incorporate the optional first drying step. Support for this process is provided by example 3 of the specification. The examples in the present application show that electrodes formed via this process provide capacitance comparable to activated carbon while providing a decreased resistance even after aging. These improved properties provided by the film formed from the activated carbon and carbon nanotubes in the ratios of the present invention are neither anticipated nor rendered obvious by Shinozaki et al. '990

Shinozaki et al. '990 discloses a process fro producing an activated carbon for an electric double layer capacitor wherein the activated carbon exhibits specific physical properties. At column 12, lines 34-41, the reference disclose that the electrode is formed from a powder of the carbon and a binder and preferably an electrically conductive material kneaded in a solvent. The electrically conductive materials disclosed (at column 12, line66- column 13, line 1) are carbon black, natural graphite, artificial graphite, titanium oxide or ruthenium. Applicants submit that there is no disclosure of the combination of carbon black and carbon nanotubes in a specific ratio as claimed in the present application which provides the surprising and unexpected results of little or no decrease in capacitance and decreased resistance even after aging. Applicants submit that Shinozaki et al. '099 fails to anticipate or render obvious the current invention as presently claimed and the rejection should be withdrawn.

In view of the foregoing amendments and comments, applicants submit that claims 1-5 and 7-13 are in condition for allowance and prompt favorable actions is solicited.

Respectfully submitted,

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